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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,270	03/09/2005	Keita Nagano	0033.0988PUS1	2945

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EXAMINER	
HAILEY, PATRICIA L	
ART UNIT	**PAPER NUMBER**
1755	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/527,270	NAGANO, KEITA	
	Examiner	Art Unit	
	Patricia L. Hailey	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/09/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on March 9, 2005.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 2, 4, and 5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 9-11, and 13-18 of copending Application No. 10/488,804.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the respective sets of claims are both directed to an aluminum flake pigment and a method for its production. However, the claims in the copending '804 application recite in its method claims the employment of steel ball grinding media exhibiting a diameter ranging between 0.3 and 1.0 mm, which is overlapped by the instant claims' recitation of 0.3 to 1.5 mm (see instant claim 4).

The respective sets of claims also recite comparable or overlapping ranges for the particle size/diameter of the aluminum flake, and its aspect ratio.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent No. 11-152423.

The Japanese Patent discloses an aluminum flake pigment having a mean particle size ranging from 4 to 20 μm and an aspect ratio of from 15 to 50, and also discloses a paint comprising said pigment. See the claims of the Japanese Patent, as well as paragraphs [0005] and [0016]-[0020].

Because this reference reads upon Applicants' claim limitations with respect to the pigment and the properties of particle diameter and aspect ratio, the claim limitations regarding the "average value of minimum diameters/maximum diameters of at least 0.6" is considered inherently encompassed by the Japanese Patent.

In view of these teachings, the Japanese Patent anticipates claims 1, 2, and 6.

6. Claims 1, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Hieda (U. S. Patent No. 4,936,913).

Hieda teaches an aluminum flake pigment particularly suitable for incorporating in paint, as well as in inks. See col. 3, lines 6-17 of Hieda (considered to read upon **claims 6 and 7**).

Table 1 of Hieda depicts exemplary flake pigments exhibiting average diameters within Applicants' claimed range of "3 to 20 μm".

The claim limitation "an average value of minimum diameters/maximum diameters of at least 0.6" is considered inherently encompassed by Hieda, as this reference reads upon the claim limitations regarding the average particle diameter.

In view of these teachings, Hieda anticipates claims 1, 6, and 7.

7. Claims 1, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Booz (U. S. Patent No. 4,469,282).

Booz teaches metal flake produced from metals such as aluminum (col. 2, lines 49-50), which can be employed in a "vast number of paint, coating, and ink formulations" (col. 6, lines 59-62).

Examples 1-4 of Booz depict exemplary aluminum flakes exhibiting median particle sizes within Applicants' respectively claimed range.

The claim limitation "an average value of minimum diameters/maximum diameters of at least 0.6" is considered inherently encompassed by Hieda, as this reference reads upon the claim limitations regarding the average particle diameter.

In view of these teachings, Booz anticipates claims 1, 6, and 7.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hieda (U. S. Patent No. 4,936,913) in view of Bunge et al. (U. S. Patent No. 4,049,610).

Hieda is relied upon for its teachings with respect to claims 1, 6 and 7, as stated Item 6 above. Additionally, Hieda teaches the preparation of Patentee's aluminum flake pigment, which involves milling an aluminum powder with a grinding medium such as mineral spirit (considered to read upon "organic solvent" in **claim 4**) and, if necessary, other grinding additives in a ball mill using steel balls each of which have a diameter of 2 mm. See col. 3, lines 15-39 and the Examples of Hieda, which also discloses that the "aluminum powder used as the starting material is selected among the commercially available aluminum powder"; this disclosure is considered to encompass commercially available powders exhibiting a particle diameter within the range recited in **claim 5**.

The Examples also depict the employment of oleic acid with mineral spirit as a milling media. As oleic acid is a fatty acid, its employment in milling aluminum powder would expectedly result in adsorption thereof by the aluminum to some extent. Although Hieda does not disclose the amount of said adsorption as recited in claim 3, it would have been obvious to one skilled in the art at the time the invention was made to determine through routine experimentation the optimal amount of oleic acid to facilitate

such an adsorption thereof by the aluminum flakes produced in the milling process. Thus, the limitations of **claim 3** are considered encompassed by Hieda.

Hieda does not disclose the employment of grinding media having diameters in the range of 0.3 to 1.5 mm, as recited in claim 4.

Bunge et al. disclose that it is known in the art to produce pigment dispersions containing solvent in conventional wet comminution equipment, such as ball mills (also disclosed in Hieda at col. 3, lines 33-40; note that this excerpt by Hieda also discloses milling via dry or wet milling), which contain "grinding bodies the size of which corresponds approximately to 0.1-10 mm diameter, preferably 0.5-1.2 mm diameter, consisting of steel,...". See col. 3, lines 35-44 of Bunge et al.

Further, Hieda at col. 3, lines 15-17 disclose that the "aluminum flake pigment...is prepared according to any of the known processes for preparing the metal powder pigment."

It would therefore have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Hieda by incorporating therein the teachings of Bunge et al., i.e., the employment of steel balls having, preferably, a diameter of 0.5-1.2 mm, in a conventional ball milling process, and thereby obtain Applicants' claimed invention.

12. Claims 1, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Booz (U. S. Patent No. 4,469,282) in view of Bunge et al. (U. S. Patent No. 4,049,610).

Booz is relied upon for its teachings with respect to claims 1, 6, and 7, as stated in Item 7 above. Additionally, Booz discloses the formation of Patentee's metal flakes (e.g., aluminum flakes) via charging metal particles, a milling lubricant (e.g., oleic acid), a solvent (e.g., mineral spirits, see col. 3, lines 1-10), and milling material to a ball mill. See col. 2, lines 30-59 of Booz.

Because Booz teaches the employment of oleic acid with mineral spirit as a milling media, it is considered that since oleic acid is a fatty acid, its employment in milling aluminum powder would expectedly result in adsorption thereof by the aluminum to some extent. Although Booz does not disclose the amount of said adsorption as recited in claim 3, it would have been obvious to one skilled in the art at the time the invention was made to determine through routine experimentation the optimal amount of oleic acid to facilitate such an adsorption thereof by the aluminum flakes produced in the milling process. Thus, the limitations of **claim 3** are considered encompassed by Booz.

With respect to the milling material, generally spherical metal balls (preferably made of steel) are used. See col. 3, lines 11-18 of Booz, which also discloses that the steel balls typically range in size from 3/16" to 3/8" in diameter (3.175-9.525 mm).

Booz does not disclose the employment of grinding media having diameters in the range of 0.3 to 1.5 mm, as recited in claim 4.

Bunge et al. disclose that it is known in the art to produce pigment dispersions containing solvent in conventional wet comminution equipment, such as ball mills (also disclosed in Booz), which contain "grinding bodies the size of which corresponds

approximately to 0.1-10 mm diameter, preferably 0.5-1.2 mm diameter, consisting of steel,...". See col. 3, lines 35-44 of Bunge et al.

It would therefore have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Booz by incorporating therein the teachings of Bunge et al., i.e., the employment of steel balls having, preferably, a diameter of 0.5-1.2 mm, in a conventional ball milling process, and thereby obtain Applicants' claimed invention.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia L. Hailey/plh
Examiner, Art Unit 1755
September 14, 2006

J.A. LORENGO
SUPERVISORY PATENT EXAMINER